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CONTAINER AND METHOD OF PRODUCTION THEREOF

(57) The present invention relates to a process of implementing a container of industrial type. More in particular the present invention relates to an industrial, metallic container coated inside with a protective coating.

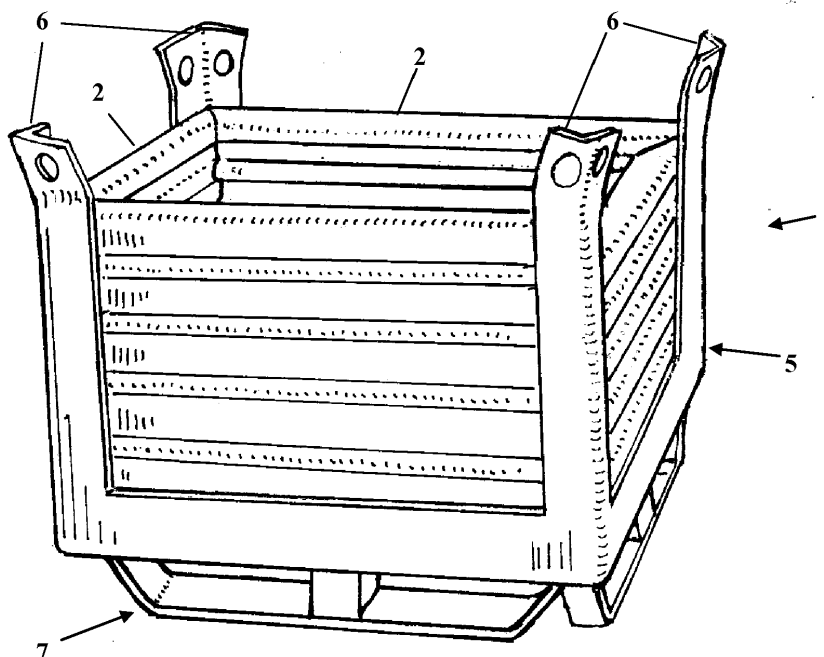


FIG. 1

Description

[0001] The present invention relates to a container of industrial type. More in particular, the present invention relates to an industrial container, preferably a metallic and stackable one, coated inside with a protective coating.

[0002] In the state of art, the containers of industrial type on the market are implemented in metal, through a process of assembling the various parts composing the container itself.

[0003] Generally, such containers have side walls and a bottom made of metal and the products are inserted inside thereof.

[0004] The walls often are folded by forming ribs guaranteeing greater resistance to the container.

[0005] It is clear that there could be the need of inserting fragile products, or products which can be easily damaged after shocks, inside containers of this type.

[0006] Therefore, their direct contact with the walls or the bottom of the metallic container can result to be particularly critical from this type of view.

[0007] The object of the present invention is then to overcome the above-illustrated problems and this is obtained with a container as defined in claim 1.

[0008] An additional object of the present invention is a process for the production of a container of the present invention.

[0009] Additional features of the present invention are defined in the corresponding depending claims.

[0010] The present invention, by overcoming the problems of known art, involves several and evident advantages.

[0011] In particular, the inner coating of the container according to the present invention has protective, anti-shock and sound-absorbing features. For such properties it can be used in any industrial and not-industrial field.

[0012] Furthermore, the properties of the walls and of the bottom of the coated container have the aim of guaranteeing the integrity of the products inserted inside thereof, as the contact of the products with the stiff sheets made of iron often scratches the surface thereof.

[0013] All this allows minimizing and/or eliminating the blisters on the products, as the insertion of the products in the containers takes place in very short time, neglecting the stiffness of the bottom and of the walls, blistering the product.

[0014] Furthermore, even the acoustic stress caused by the insertion of the product into the container is minimized, thanks to the sound-absorbing properties of the plastic and the rubbers.

[0015] Additional advantages, together with the features and use modes of the present invention will result clear from the following detailed description of preferred embodiments thereof, shown by way of example and not for limitative purpose.

[0016] The figures of the enclosed drawings will be referred to, wherein:

- figure 1 is a perspective view of a container according to the present invention; and
- figures 2 to 7 illustrate a production process according to the present invention.

[0017] The present invention will be described hereinafter by referring to the above-mentioned figures.

[0018] By firstly making reference to figure 1, this shows a container 1 according to the present invention.

[0019] The container 1 first of all has side walls and a bottom. Thereamong, at least a wall and/or the bottom is coated with a material apt to absorb shocks.

[0020] Typically, and preferably, the side walls and/or said bottom are made of metallic material.

[0021] According to a preferred embodiment of the present invention, the material of the inner coating apt to absorb shocks is a plastic material or a rubber or a foam material.

[0022] For example it can be PVC or a mixture deriving from the PVC such as for example plastisol, a plastic composition in liquid form given by a mixture of plastifying oils and PVC. Alternatively it can be rubber, resin or a silicone material or any other material suitable to the purpose.

[0023] According to an embodiment, the container provides a supporting and reinforcing structure 5 having angular supporting elements 6.

[0024] Advantageously, the container 1 can even provide one or more bases for inserting a fork of a lift truck.

[0025] According to a preferred embodiment, it can be provided that the container 1 has a shape suitable to be stacked together with other equal containers.

[0026] The subsequent figures 2 to 7 relate to a process for implementing a container according to the present invention.

[0027] In particular, first of all it is provided that metallic plates 10 are provided (figures 2 and 3) which, at the end of the process, will form the walls and/or the bottom of a container with inner coating.

[0028] On each one of such plates 10 a coating is then applied (figure 4), according to known techniques, variable depending upon the type of material used for the coating itself. The material used for the coating will have to be apt to absorb shocks. Coated plates 11 are obtained, as illustrated in figure 5.

[0029] At last, the process provides assembling the coated plates 11 to form the real container.

[0030] According to an embodiment, the process can comprise even a step of washing said metallic plates 10 and a possible subsequent step of applying an adherence promoter for plastics, rubber, silicone and resins, before applying the coating layer. Such washing step is shown, schematically, in figure 2.

[0031] In case, even a subsequent drying step can be provided, as illustrated in figure 3.

[0032] As already indicated, the material used for the coating, which will have to absorb shocks, preferably is a plastic material or a rubber or a foam material. For

example it can be PVC, or a mixture deriving from the PVC such as for example plastisol, a plastic composition in liquid form given by a mixture of plastifying oils and PVC. Alternatively it can be a material like rubbers and/o silicones or any other material suitable to the purpose.

[0033] After having implemented the coating layer on the plate, the process can provide an additional step of polymerizing the coating material in a desiccator, followed by a possible cooling step.

[0034] It is to be meant that the coated plates 11 in case could be subjected to a shaping step, before assembly, as illustrated in figure 6. This to the purpose of implementing reinforcing ribs or real shapings, functional to the transportation of objects and/or specific products, on the walls and/or the bottom of the container.

[0035] At the end of the process, the assembly step can be performed, for example by welding, bolting, riveting, bonding or interlocking system of coated plates 11 on a supporting and reinforcing structure 5 having preferably angular (not excluding tubular) supporting elements 6, of course by making that the coated face of each one of the plates is on the inner side of the container.

[0036] At the end of such process the formed container can, or cannot, be painted outside and subsequently put on the market.

[0037] The present invention has been sofar described by referring to preferred embodiments thereof. It is to be meant that the technical solutions implemented in the embodiments described herein by way of example could advantageously be combined differently therebetween, to create other embodiments, belonging to the same inventive core and however all within the protection scope of the herebelow reported claims.

Claims

1. A process for implementing a container with coated inner walls and/or bottom, comprising the steps of:

- providing metallic plates (10) to form the walls and/or the bottom of said container;
- applying on each plate (10) a coating layer made of a material apt to absorb shocks, obtaining coated plates (11);
- assembling said coated plates (11) to form said container,

the process further comprising a step of shaping said coated plates (11), before assembly.

2. The process according to claim 1, comprising a step of washing said coated plates (10) and, preferably, applying adhesion promoters (10), before applying the coating layer.
3. The process according to claim 1 or 2, wherein said material apt to absorb shocks is a plastic material or

rubber or a foam material or silicone or resins.

4. The process according to claim 3, further comprising a step of polymerizing the coating material in a desiccator.
5. The process according to one of claims 1 to 4, wherein the assembly takes place by welding, bolting, riveting, bonding or interlocking system of coated plates on a supporting and reinforcing structure (5) preferably having angular supporting elements (6).
6. An industrial container (1), having side walls (2) and a bottom, **characterized in that** at least one between said side walls and/or said bottom are coated with a material apt to absorb shocks, implemented through a process according to anyone of the claims 1 to 5.

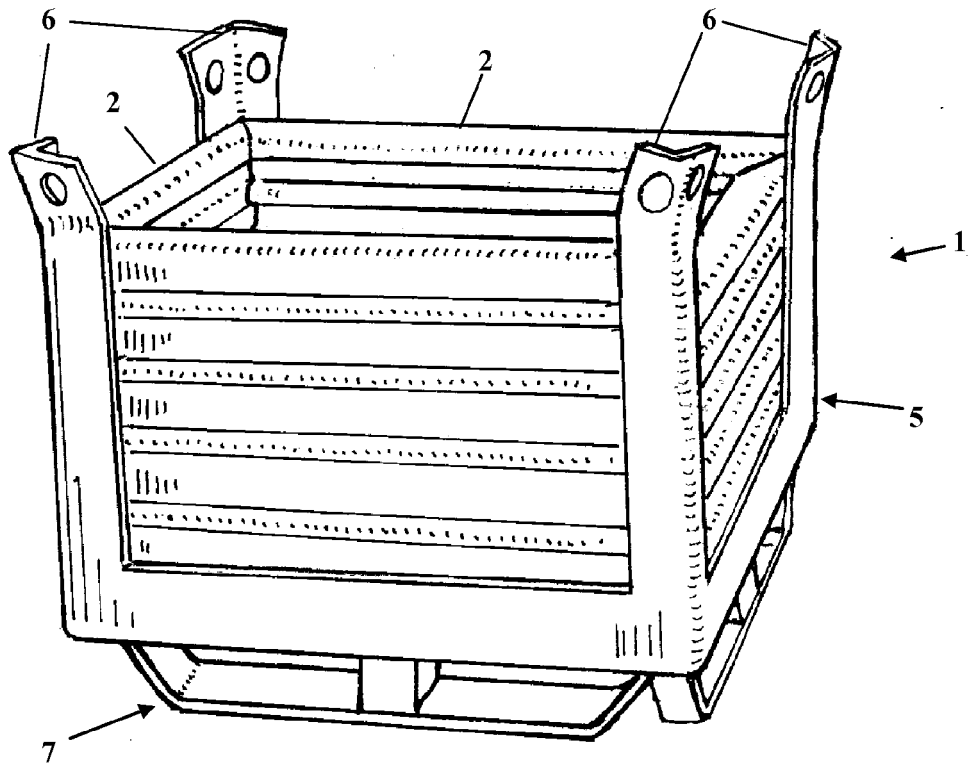


FIG. 1

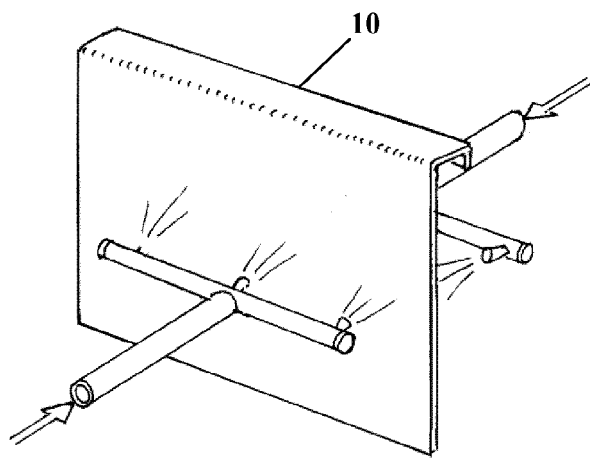


FIG. 2

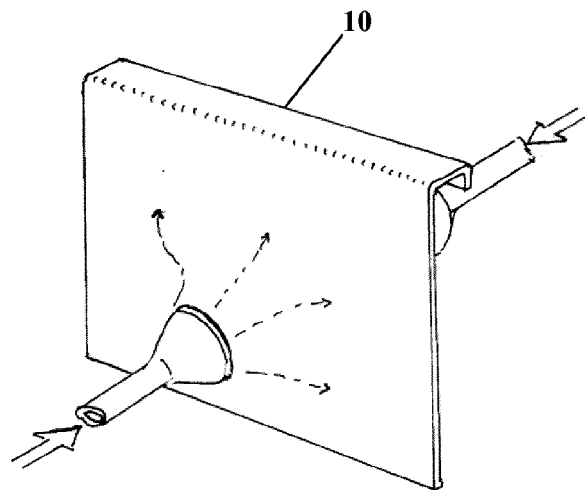


FIG. 3

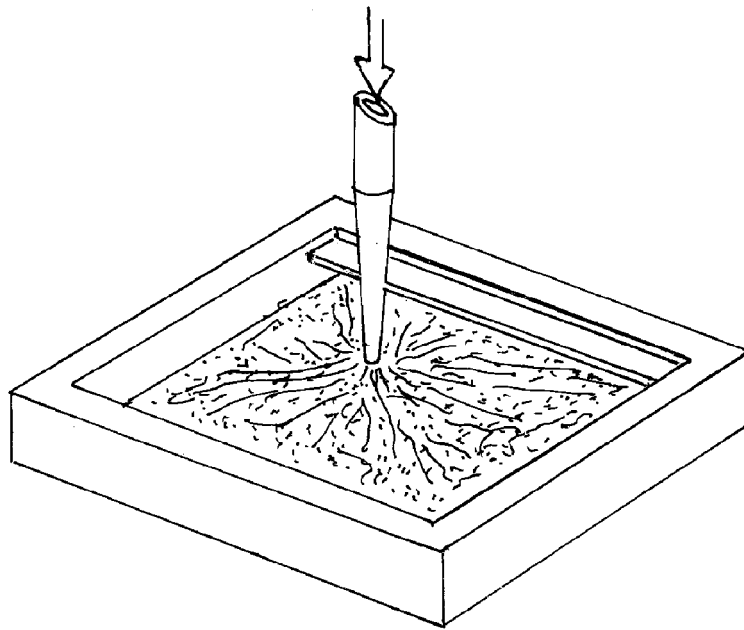


FIG. 4

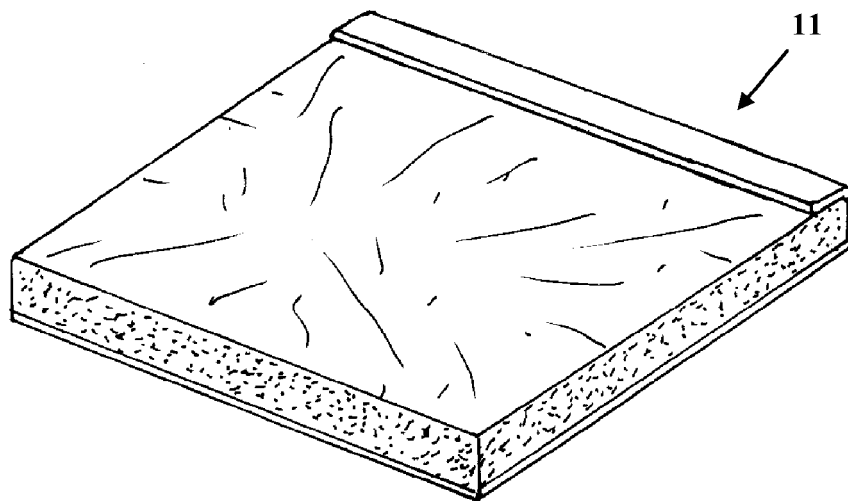


FIG. 5

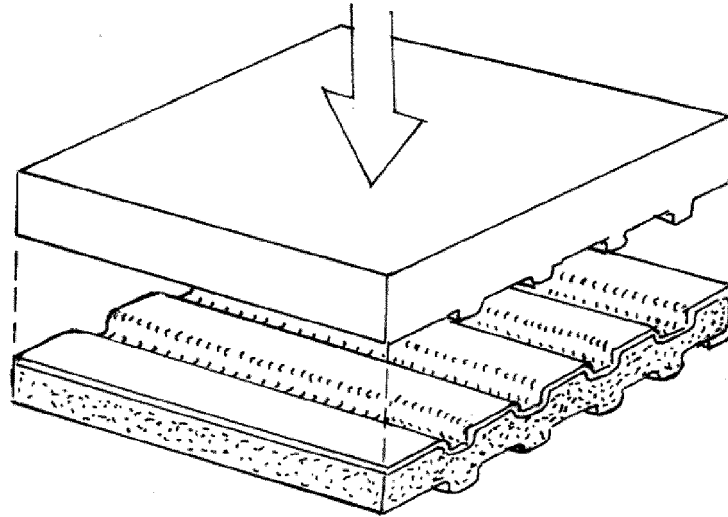


FIG. 6

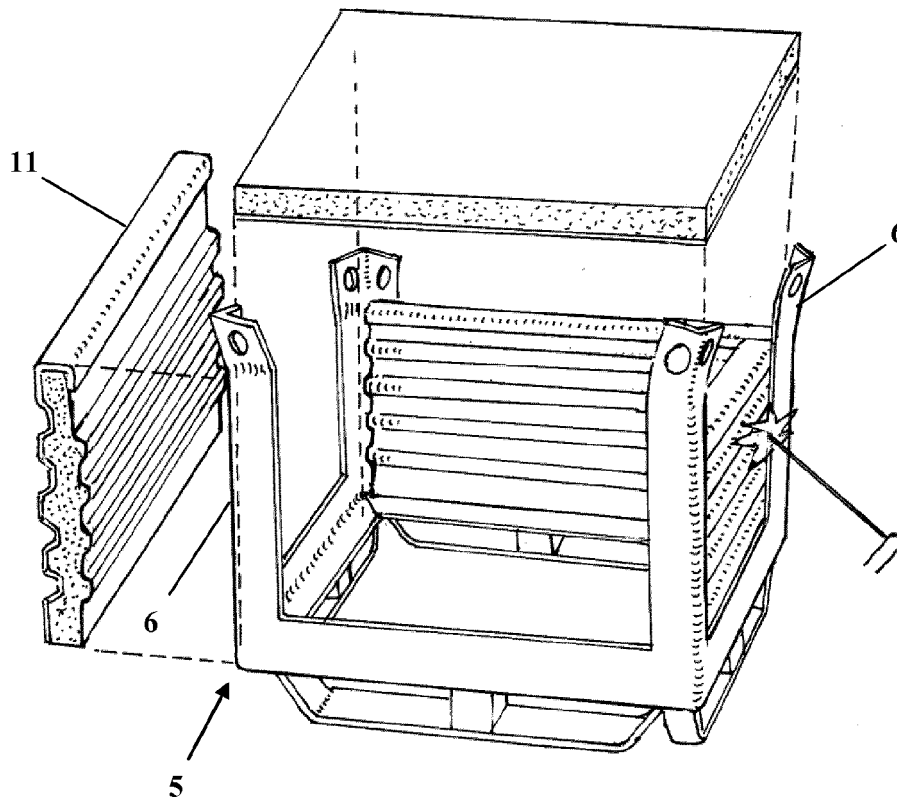


FIG. 7



EUROPEAN SEARCH REPORT

Application Number
EP 15 16 7161

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	US 5 238 715 A (WEFERS KARL [US] ET AL) 24 August 1993 (1993-08-24) * column 2, line 65; figure 7 * * column 3, line 1 - line 5 * * column 7, line 32 - line 34 * * column 9, line 47 - line 57 * * column 9, line 65 - line 68 * * column 10, line 16 - line 18 * -----	1-6	INV. B65D19/00 B65D19/08 B65D19/38 B65D25/14 B65D81/02 B05D3/12 B05D3/00 B05D7/22 B65D19/44
X	WO 2008/002007 A1 (SAMJUNG IND CO LTD [KR]; LEE HI-MAN [KR]) 3 January 2008 (2008-01-03) * page 12, line 5 - line 9; figure 5 * -----	1-6	
			TECHNICAL FIELDS SEARCHED (IPC)
			B65D C23C B05D
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 14 October 2015	Examiner Sundell, Olli
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	

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**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 15 16 7161

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The members are as contained in the European Patent Office EDP file on
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14-10-2015

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82